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## REMARKS

Claims 1-32 and 34-42 are pending herein.

I. The allowable subject matter.

Applicants respectfully thank the Examiner for indicating the allowable subject matter. On page 3 of the Office Action, the USPTO respectfully indicates that claims 22 and 38 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully believe, however, that the USPTO intended to indicate claim 33, and not claim 22, as the allowable subject matter. This belief is based on the Office Action Summary, which indicates "Claim(s) 33 and 38 is/are objected to," and page 3 of the Office Action, which indicates "the orientation camera is disposed on the rotatable structure" as the allowable subject matter. Applicants respectfully note that this limitation is found in claim 33, not claim 22.

Assuming that claim 33 is the allowable subject matter, Applicants respectfully accept the indicated allowable subject matter by amending independent claim 30 to incorporate the allowable subject matter of dependent claim 33.

II. The anticipation rejections based on Pettersen (WO 97/14015).

The USPTO respectfully rejects Claims 1-32, 34-37, and 39-42 under 35 U.S.C. § 102(b) as being anticipated by Pettersen. Of these, claims 1, 21, 26, 30, 36, 37, and 40 are independent claims. As noted above, independent claim 30 has been amended to include allowable subject matter.

A. Pettersen does not disclose an optical fiber system for optically interconnecting a laser radiation source and an optical detector with an emission end of the optical fiber system, as claimed in claim 1.

Regarding the limitations of claim 1 that claim in relevant part:

"at least a first **optical fiber system** for optically interconnecting the first laser radiation source and the first optical detector with an emission end of the first optical fiber system, the emission end disposed on the rotatable portion for emitting laser radiation to the remote target and for receiving laser radiation

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reflected from the remote target, wherein an emission direction of the laser radiation is controlled according to the rotation of the rotatable portion;"  
(emphasis added)

it is respectfully not seen where Pettersen discloses the claimed structure quoted above.

Specifically, it respectfully appears that Pettersen does not disclose an optical fiber system at all, let alone one that optically interconnects a laser radiation source and an optical detector with an emission end of the optical fiber system, as claimed in claim 1.

Nonetheless, the USPTO respectfully alleges on page 2 of the Office Action that elements 33, 36, 26, 22, and 21 of Pettersen compose an optical fiber system or path. However, as noted in the Pettersen description, elements 21 and 22 are "light sources" (page 8, line 10), element 26 is an "activation switch" (page 6, line 8), element 33 is a "lens unit" (page 6, line 25), and element 36 is a "theoretical image point" (page 7, line 36).

Furthermore, it is respectfully noted that Pettersen does not appear to disclose anywhere that these elements are connected by or compose an optical fiber system, as claimed in claim 1. In other words, there does not appear to be a single mention of optical fibers in Pettersen at all, let alone an optical fiber system configured as specifically claimed in claim 1. Therefore, it is respectfully believed that the USPTO made a clear technical error in construing these elements to be the specifically claimed optical fiber system of claim 1.

In contrast, present Figure 3 illustrates one possible embodiment of the claimed structure quoted above. As seen in present Figures 1-3, and explained on pages 15-16 of the present specification, optical fibers 110-112 optically interconnect laser 102, laser 104, and absolute distance meter 103 with beam combiner block 200. As further explained on page 17 of the present specification, the output of beam combiner block 200 is laser beam 250. In other words, the point where the laser beam 250 is emitted from the block is one possible embodiment of the emission end claimed in claim 1. Therefore, combiner block 200 and optical fibers 110-112 compose an optical fiber system for optically interconnecting a laser radiation source and an optical detector with an emission end of the optical fiber system, as claimed in claim 1.

The specifically claimed optical fiber system is important and non-trivial because it provides inherent significant advantages over conventional systems. For example, as noted on pages 10-11 of the present specification, the specifically claimed structure eliminates the need for

beam-steering optics because the laser light is routed through the laser tracker with optical fibers rather than with beam-steering mirrors or prisms. This allows laser light to be processed, detected, and analyzed by optical and electrical components located away from the rotating elements within the tracker. This inherently reduces the size and cost of the tracker system, as well as improves accuracy and stability.

In summary, Pettersen does not appear to disclose any kind of optical fibers at all in its system. Thus, Pettersen does not disclose the specifically claimed optical fiber system of claim 1. Therefore, it is respectfully asserted that Pettersen does not anticipate claim 1.

B. The optical fiber paths of claims 21 and 26.

Similar to claim 1, claims 21 and 26 claim optical fiber paths to optically couple or interconnect structures. As noted above, Pettersen respectfully does not appear to disclose any optical fiber structures. Thus, Pettersen respectfully cannot disclose the specifically claimed optical fiber paths of claims 21 and 26. Therefore, it is respectfully asserted that Pettersen does not anticipate claims 21 and 26.

C. Pettersen does not disclose an orientation camera disposed on the rotatable structure, as claimed in independent claim and 36.

Regarding the limitations of claim 36 that claim in relevant part:

“an orientation camera **disposed on the rotatable structure** and optically coupled with the reflected laser radiation to determine three orientational degrees of freedom of the retroreflective target.” (emphasis added)

it is respectfully not seen where Pettersen discloses the claimed structure quoted above.

Specifically, as the USPTO respectfully admits on page 3 of the Office Action: “The prior art of record fails to show or to suggest a laser based coordinate measuring device comprising of the elements presently claimed wherein the orientation camera is disposed on the rotatable structure.” (emphasis added) Thus, it is respectfully asserted that Pettersen does not disclose this specifically claimed limitation of claim 36. Therefore, it is respectfully asserted that Pettersen does not anticipate claim 36.

D. Pettersen does not disclose a locator camera disposed on a rotatable structure, as claimed in claim 37.

Regarding the limitations of claim 37 that claim in relevant part:

“a locator camera **disposed on the rotatable structure** for determining an approximate location of the target;” (emphasis added)

it is respectfully not seen where Pettersen discloses the claimed structure quoted above.

Specifically, Pettersen discloses cameras 7 and 8, as seen throughout the Figures in Pettersen. However, it respectfully appears that there is no indication whatsoever that camera 7 or camera 8 is disposed on a rotatable structure, as claimed in claim 37.

In fact, the only rotatable structure identified by the USPTO is light sources 21-25, as noted on page 2 of the Office Action. It is clearly seen in the Pettersen drawings that neither camera 7 nor camera 8 is disposed on or even near light sources 21-25. Thus, it is respectfully asserted that neither camera 7 nor camera 8 of Pettersen can be a locator camera disposed on a rotatable structure, as claimed in claim 37.

The USPTO also respectfully alleges, on page 2-3 of the Office Action, that elements 38 and 39 are cameras. However, as clearly stated on page 9, line 12, elements 38 and 39 are reflecting points, not cameras. Therefore, it respectfully appears that the USPTO has made a clear technical error in construing elements 38 and 39 to be cameras. Therefore, it is respectfully asserted that these structures could not be a locator camera disposed on a rotatable structure, as claimed in claim 37.

In contrast, present Figure 2 illustrates one possible embodiment of the claimed structure quoted above. Specifically, as seen in Figure 2, locator camera block 230 can be disposed on rigid structure 190. As indicated on page 13 of the present specification at lines 9-10, motor 81 can rotate rigid structure 190. Thus, locator camera block 230 is disposed on a rotatable structure, as claimed in claim 37.

Thus, it is respectfully asserted that Pettersen does not disclose a locator camera disposed on a rotatable structure, as claimed in claim 37. Therefore, it is respectfully asserted that Pettersen does not anticipate claim 37.

E. Pettersen does not disclose coupling laser radiation into a first end of an optical fiber path, as claimed in claim 40.

Regarding the limitations of claim 40 that claim in relevant part:

“coupling laser radiation into a first end of an optical fiber path, the optical fiber path having a second end disposed on a rotatable structure;” (**emphasis added**)

it is respectfully not seen where Pettersen discloses the claimed method step quoted above.

As noted above, Pettersen respectfully does not appear to disclose any optical fiber structures. Thus, Pettersen respectfully cannot disclose coupling laser radiation into a first end of an optical fiber path. Therefore, it is respectfully asserted that Pettersen does not anticipate claim 40.

### III. The dependent claims.

As noted above, it is respectfully asserted that independent claims 1, 21, 26, 30, 36, 37, and 40 are allowable, and therefore it is further respectfully asserted that dependent claims 2-20, 22-25, 31-35, 27-29, 31-32, 34-35, 38-39, and 41-42 are also allowable.

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IV. Conclusion.

Reconsideration and allowance of all of the claims is respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Please contact the undersigned for any reason. Applicants seek to cooperate with the Examiner including via telephone if convenient for the Examiner.

Respectfully submitted,

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